

# Wisconsin Agricultural Education & Workforce Development Council

## 2015 Annual Report

### Executive Summary

#### Demand Exceeding Supply

The Wisconsin Agricultural Education and Workforce Development Council (“Council”) is charged with ensuring Wisconsin has the availability of a strong, well-educated workforce for the agriculture, food and natural resource sectors.

Education is the cornerstone of life. How we view our experiences is based on our education, both inside and outside the classroom, and those who provide the training and education.

Dairy cows can now send a text message to their herd manager and veterinarian that they are not feeling well. Dairy cattle wear pedometers to monitor their health and eating habits. Tractors and other farm equipment can send text messages to the local dealership when computer monitors sense that something is out of specification dispatch a technician to the field and replace or repair the defective equipment thereby minimizing down time. Deere CEO Samuel Allen, in releasing the new John Deere line of series R tractors, recently stated “the technology in these tractors has more lines of software code than a space shuttle.” Agriculture in Wisconsin and around the world has become quite complex yet stayed simple in many ways. The STEM (science, technology, engineering and math) requirements for individuals entering many of these fields are very high.

The Wisconsin Agricultural Education and Workforce Council held the inaugural Wisconsin AgriFuture Summit in April 2015. One of the “game changing” points of information was presented by Dennis Winters, chief economist, Wisconsin Department of Workforce Development. According to Winters, although the Wisconsin population is expected to grow to 6.5 million by 2030, the civilian workforce will flatten out before that time. This will create a worker shortage that we have never had to deal with in our workforce history. This means that we will be, and in many cases, already are competing for the same worker that many other industries are actively recruiting, including teachers. Mr. Winters also indicated that the workers required to fill many of these jobs will come from immigrant populations. Immigrant workers are already critical to the success of Wisconsin agriculture, especially the dairy industry. This is another issue that must be carefully and meaningfully dealt with for agriculture. This phenomenon of worker shortage has begun to manifest itself in our inability to fill open positions throughout the agricultural industry. However it has reached a critical stage for agricultural education, especially at the secondary level. One of our goals as a Council is to expand the number of schools capable of graduating more students with a background in agriculture, especially with an emphasis in agri-science, technology and applied economics, at all levels of the educational system. The primary starting point is to recruit, train and most importantly, retain, highly qualified teachers at all levels of the

education process so that we can reach more students and produce more career ready graduates at all levels of education.

The number one recommendation from the AgriFuture Summit was the creation of an Agricultural Education Task Force to address the critical shortage of qualified teachers at all levels of the educational process. This task force will include business, educators, school administration, school counselors, government and eventually, students. The Task Force will be charged with examining current issues, identify what is working well and why, and identifying new ways to recruit, train and retain the qualified teachers we need to train the future workforce for Wisconsin agriculture.

Educational systems and institutions in Wisconsin face many challenges in preparing the future workforce. It is critical for the success of our agricultural, food and natural resource sectors that we have the right combination of skills in the right place at the right time. Current and expected challenges include a shrinking supply of qualified instructors at all levels; the ability to attract and retain high quality staff; ability to expand programs to meet growing demand; expanding secondary educational programs in urban settings; sustaining rural programs in periods of declining Pre-K-12 enrollments; expanding the number of agricultural/science equivalency approvals and promoting quality curriculum and instructional facilities to meet STEM needs; professional development, especially related to rapidly changing technology; and access to funding at all levels to meet basic educational system needs as well provide modern facilities for training, education and research. Please review each of the education system reports below for more details.

While lack of funding for the Council to carry out its mission remains an issue, the 2015-16 program of work calls for increased cooperation between the Council, educational institutions at all levels, industry organizations, state agencies and workforce development boards throughout the state. These initiatives are described below. Funding is being developed through grants, private industry funds, in-kind support, individuals and organizational contributions as well as other sources.

## Introduction

This Annual Report highlights some of the accomplishments of the Council for the year ending June 30, 2015. An excellent source of information on the Council is located at <http://wiaglink.org/>. Activities of the Council focused on specific initiatives to meet our purpose of ensuring the availability of a strong, well-educated workforce for agriculture, food and natural resource sectors.

Research completed by the Council in 2012 conservatively estimated that there will be over 132,000 openings for career positions in Wisconsin's food, agriculture and natural resource sectors through 2020. Approximately 43,000 of these positions will be created by increased demand for agricultural products and growth in the industry. However, about 68% (89,190) of the anticipated openings will be created by retirements or those leaving career positions in these fields. Nothing has happened to change this forecast.

## **Council Creation**

Wisconsin Act 223, enacted on 4/7/2008, created the Wisconsin Agricultural Education and Workforce Development Council. To review the complete Act go to [http://www.legis.state.wi.us/2007/data/acts/WisAct 223](http://www.legis.state.wi.us/2007/data/acts/WisAct%20223). In September of each year a report is required to be delivered to the Legislature, Governor and other specified institutions. The Report must include the following:

1. A summary of the activities of the Council during the fiscal year ending on the preceding June 30.
2. The Council's reaction to the annual agricultural program reviews prepared by the Department of Public Instruction for primary and secondary schools, the WI Technical College System, the University of Wisconsin System and the University of Wisconsin Extension-Cooperative Extension with input from or review by the University of Wisconsin System administration.
3. A list of current and anticipated challenges related to agricultural education.
4. Recommendations of the Council, including any recommendations related to the structure of the Council or the termination of the Council.
5. Dissents of any Council member related to the activities and recommendations of the Council.

## **Agricultural Education and Workforce Development Council Purpose**

The Council shall seek to do all of the following:

1. Increase the hiring and retention of well-qualified employees in industries related to agriculture, food, and natural resources.
2. Promote the coordination of educational systems to develop, train, and retrain employees for current and future careers related to agriculture, food, and natural resources.
3. Develop support for employment in fields related to agriculture, food, and natural resources.
4. Recommend policies and other changes to improve the efficiency of the development and provision of agricultural education across educational systems.
5. The council shall seek to accomplish the purposes by advising state agencies on matters related to integrating agricultural education and workforce development systems, including all of the following:
  - a. The coordination of programs.
  - b. The exchange of information related to educational and workforce development needs.
  - c. The monitoring and evaluation of programs.
6. The Council shall identify criteria for evaluating the success of its activities, shall evaluate the success of its activities using those criteria, and shall annually report the results of the evaluation in the annual report.

The Council has undertaken the following:

1. Council Structure Development/Activities:
  - a. New Council members since the last Annual Report include:
    - i. Carrie Morgan, Wisconsin Technical College System
    - ii. Please see <http://wiaglink.org/> to review the Council Membership Chart.
  - b. The Council Executive Committee is currently led by Chair Paul Dietmann, Badgerland Financial; Vice-Chair Corey Kuchta, Wisconsin Public Service Corporation; and Past Chair Paul Larson, Freedom Schools. Al Herrman serves as Executive Director.

- c. The Council also conducted Legislative & Government Agency briefings on Council objectives, activities and future direction, including funding and support.
- 2. Conducted the inaugural AgriFuture Summit. 150 people representing industry, education and government leaders along with students (future employees) from post-secondary secondary institutions to attended the inaugural AgriFuture Summit in April, 2015. The attendees heard from educators, industry and other speakers. Discussion groups were held to address three basic questions.
  - a. What is the future of agriculture?
  - b. What are the challenges facing agriculture?
  - c. What are the innovative ways to meet those challenges, with an emphasis on education and workforce development?

Educational leaders at the Summit recommended that agricultural business leaders collaborate closer with officials in local schools, especially those without agricultural education programs, to inform them about the new and current opportunities available in agriculture so those opportunities can be conveyed to students and local school leadership. We also need to focus on increasing the science equivalency of agricultural education, modernize the common perception of the agricultural industry, and make teaching a proud profession again.

Industry leaders at the Summit highlighted some of the other issues to be addressed. All panel members agreed that there is shortage of workers for the growing agricultural industry. Here are a few of their recommendations:

- a. Increase computer and technology skills.
  - b. Increase connections to local industry to build applied knowledge.
  - c. Work with school counselors and administration to strengthen their agricultural literacy.
  - d. Help the students learn soft skills, such as collaboration, respect, initiative and good work habits.
  - e. Improve the general public, future workforce and educational leadership perception of agriculture.
- 3. Participated with other entities in seeking funding.
  - a. In an effort led by the University of Wisconsin – Platteville (UWP), the Council partnered with UWP and Southwest Technical College in seeking a capacity building grant from for Non Land Grant Colleges of Agriculture provided by USDA. The Grant was not awarded.
  - b. Several meetings were held with the Governor's staff regarding funding for the Council. While initial plans included the Council, the final budget did not include funding for the Council.
- 4. Promotion of Careers in the agricultural, food and natural resource sectors. The Council participated in several educational forums and public events to promote careers in these sectors. Examples include:
  - a. Kewaunee School District Facilities Planning Committee to discuss current and future needs for agricultural education.
  - b. Wisconsin State Fair – Discovery Barnyard display on “Egg-citing” careers in agriculture.
  - c. Wisconsin Farm Technology Days. The same “Egg-citing” career display was used at this event and garnered significant press coverage.
  - d. Reviewed and recommended changes to educational materials for new courses at UW-Stevens Point.

5. WhyAg Initiative.
  - a. The Council and Northcentral Technical College (NTC) completed the process of transferring the WhyAg program to the NTC platform to enhance the WhyAg capabilities and increase coordination with the Team AG Ed efforts in Wisconsin.
  - b. For more information, please visit: <http://www.whyag.com>.
6. Organization Recognition. During 2014-15 the Council received significant in-kind contributions that enabled the Council to meet its mandated mission. The following examples are provided to identify the types of support provided and are not all inclusive of every organization or association. A few examples include:
  - a. Wisconsin Agribusiness Foundation provided significant quantities of the booklets and materials that were used at public events, including the Wisconsin State Fair and Wisconsin Farm Technology Days.
  - b. Badgerland Financial and Wisconsin State Fair (Discovery Barnyard at State Fair), UW–Extension (Farm Technology Days), Wisconsin Public Service (WPS Farm Show) and many other organizations provided space and materials for use at trade events.
  - c. Badgerland Financial provided accounting and bookkeeping services.
  - d. CRI developed the Council’s first newsletter.
  - e. WPS provided editing, printing and administrative support.
  - f. Several firms provided materials and support for the inaugural AgriFuture Summit.
  - g. The Wisconsin FFA State Officer team provided support at several events.
7. Economic Development Organizations. The Council has increased coordination with and participation in job creation and economic development efforts with other organizations in the state. Examples include:
  - a. The Council is a member of FaB – Wisconsin. FaB, an organization of the Milwaukee Association of Commerce, is dedicated to improving the food and beverage industry in Wisconsin. The Council and FaB will coordinate activities that cross-over our respective industries.
  - b. NEW North Youth Careers Pathways Task Force. The Council is a member of this initiative designed to bring industry and educators together to help identify workforce needs and design actionable careers plans for use by the students within the region covered by the three workforce development boards.
8. Wisconsin Agriculture Education Foundation, Inc. (Foundation). The Foundation’s main purpose is to ensure education in the areas of agriculture, food, environmental and natural resources continues to be part of the educational opportunities for Wisconsin students (Pre-K-12 through post-secondary). The Foundation will raise and distribute monies for charitable, educational, and scientific purposes, and to otherwise advance these causes by methods permitted under the meanings of Section 501(c) (3) of the IRS code. The Foundation was created, in part, but not entirely, to help fund activities of the Council. The Foundation has agreed to conduct fund raising and manage funds for the Council as the Council is an entity of the state, includes public employees as well as appointed and elected officials, and may be involved in activities that are not in concert with the 501 (c) (3) status. Significant points of information include:
  - a. The Foundation has retained Al Herrman, former Council Chair and recent retiree from Wisconsin Public Service, to serve as Executive Director. He receives a small stipend and provides certain services pro-bono until such time as the Council and Foundation are capable of maintaining a regular Executive Director.
  - b. The Foundation maintains an agreement with Badgerland Financial under which Badgerland Financial provides the Foundation with certain tax and accounting services.

These services are critical in maintaining the credibility and viability of the fund raising and accounting efforts on behalf of the Council.

- c. The Foundation, with assistance from the Council, provides competitive financial grants designed to enhance the ability to provide higher quality education programs at the Secondary level. The Foundation also provides competitive professional development grants for Post-Secondary technical college instructors. Applicants must demonstrate how the grants will be used to improve the educational experience, how it will be maintained, how it will benefit the school community and how success will be measured. The 2015 grant requests involved improving curriculum rigor, paperless instruction, instructional facilities, and access to scientific instructional materials. Many of the classes are designed to help students meet science graduation requirements. The 2015 winners were Campbellsport, Oakfield, Osceola, River Valley, Sun Prairie, and Wisconsin Heights School Districts. In addition, professional development grants were provided to Tracy Harper and Peter Bemis at the Technical College level.

## **2015-16 Objectives and Programs**

The primary objectives remain the same for 2015-16 with a primary focus on the Agricultural Education Taskforce.

The proposed initiatives support efforts to prepare workers for jobs in the modern workforce so our citizens can successfully pursue family-supporting careers and find true independence. This modern workforce must be prepared to address issues such as food security, bio-energy, nutrition enhancements, disease prevention, community and economic development, business systems and management, environmental challenges, improving production agriculture, and supporting industries. Enhancing our educational system is critical to the success of these efforts.

### **Primary Initiatives**

1. Agricultural Education Taskforce. Establish the Agricultural Education Task Force to address the critical shortage of qualified teachers at all levels of the educational process. This task force will include business, educators, administration, school counselors, government and eventually, students. The Task Force will be charged with examining current issues, identify what is working well and why, and identifying new ways to recruit, train and retain the qualified teachers we need to train the future workforce for Wisconsin agriculture.
2. School Counselors. These individuals are the key point of contact for students as they explore career opportunities, educational options, and begin to develop a career plan. It is essential that school counselors have the latest information and materials to advise students on career opportunities. Initiatives will include local and regional “hands-on” seminars to update Counselors on current and future career opportunities; presentations at in-service events, and potentially including the state convention; and development of materials to be used for student advising.
3. School Superintendents/Administrator programs/seminars. Similar to School Counselors, this group is critical to providing the necessary resources to support educational efforts in these areas to prepare students for employment opportunities or furthering their education in these fields. Initiatives would be similar in nature.
4. Career Discovery Camps. If budgeting and staffing permit, develop a series of half-day and one day-, week-end and week-long exploration camps held at key business and educational institution locations throughout the state. The local, regional and state-wide efforts to designed to expose students to current and potential career opportunities and educational requirements necessary to

pursue those careers. Emphasis will be placed on “hands-on” experiences and the ability to see careers in action.

5. **Mentoring Programs.** Again, if budgeting and staffing permit, develop programs designed to provide student-to-student and industry-to-student mentors that can advise students on educational and career decisions as they travel along the educational and training pathways. The goal is to increase retention of students once they enter the educational and training systems and to assist in transfers between educational institutions.

### **Additional 2015-16 Council/Foundation Plans**

The Council will also strive to:

1. Develop sustainable funding and resources for the Council and Foundation.
2. Continue to research and make application for grants and private foundation funding for career employment training and to ensure a qualified workforce for agriculture, food and natural resources.
3. Provide continued development and enhancements of the WhyAg, Job Center of Wisconsin, and other web-sites.
4. Increase the efficiency of workforce development efforts and further leverage our Public/Private Partnerships by expanding collaboration with private industry, trade associations, educators, government agencies, Workforce Development Boards and economic development groups.
5. Develop initiatives that encourage students to develop actionable career plans that involve high school, technical college and advanced degree institutions.
6. Update research on career opportunities and publicize findings.

## Annual Agriculture Education Program Reviews

### Agriculture Education in Wisconsin's PK-12 Public Schools

#### Agriculture Education in Wisconsin's PK-12 Public Schools

Agriculture education continues to prepare students for careers in the agriculture industry, while developing students' leadership skills through FFA and their Supervised Agriculture Experience (SAE). Today's agriculture education departments have developed a comprehensive structure that includes areas such as biotechnology, veterinary science, alternative energy, food science, horticulture and landscaping. With such variety, students are being prepared for the 21<sup>st</sup> Century.

#### Program Status

- The Wisconsin Department of Public Instruction has created the **Wisconsin Standards for Agriculture, Food, and Natural Resources**. This resource provides a framework for aligning agriculture, food and natural resources curriculum, instruction and assessment.
- Over 19,400 agriculture education students are also members of the Wisconsin Association of FFA. This is a 31 year high membership.
- Over 4,000 FFA members competed in career development events ranging from agriculture mechanics to environmental and natural resources.
- The Department of Public Instruction (DPI) continues to implement an agriculture/science equivalent credit process to award science credits for agriculture courses. Over 130 schools and over 380 courses have been approved.
- The implementation of career clusters and pathways in Agriculture, Food and Natural Resources as well as Science, Technology, Engineering and Mathematics, (STEM), expands career development opportunities and helps transition secondary to post-secondary.

### Agricultural Education Challenges

#### Pre-K through 12 Public School Challenges

- Shrinking supply of qualified agriculture education teachers has become a major challenge. Over the last four years 50 agriculture education teachers retired or chose a different profession. This represents almost 13% of the agriculture



education teaching profession. Also during the 2014-15 school year there were 6 emergency licensed agriculture education teachers.

- Expanding agriculture education programs in Wisconsin. Currently there are 251 school districts offering agriculture education out of the 426 school districts.
- Expanding agriculture education programs in urban school districts.
- Sustaining rural agriculture education programs during periods of declining Pre-K-12 enrollments.
- Expanding the number of agriculture/science equivalency approvals - 132 out of the 253 programs have approved agriculture/science equivalency credit.
- Promoting quality curriculum and instructional facilities for an agriculture education program to meet the STEM needs.

## Wisconsin Technical College System

The technical colleges have a long history of offering high quality programs in agriculture and natural resources. In the 2014-2015 school year, agriculture and natural resources programs included 21 applied associate degree programs, eleven 1-year technical diplomas, two 2-year technical diplomas, four short-term technical diplomas and two apprenticeships. Programs offer students education and training in a wide variety of agriculture and natural resource related professions including: Agri-Business/Science Technology, Dairy Science, Horticulture, Veterinary Technician, and Laboratory Science Technician. Enrollment is up slightly from 2014.

In high schools throughout the state, students in vocational agriculture courses are able to earn technical college credits while still in high school. Students get a jump-start on their post-secondary education by taking classes such as Animal Science, Greenhouse Management and Plant Science.

The Wisconsin Technical College System conducts graduate follow-up surveys six months after graduation on graduate's success rate finding employment as well as median starting salary. Graduates from agriculture programs in the Wisconsin Technical College System report great success at being employed in their chosen field (see figure below). For agriculture programs, the 2014 survey indicates that 97 percent of the Wisconsin Technical College System graduates who filled out the survey were employed and 87 percent were employed in an agriculture-related field. The median starting salary for these graduates was \$31,659. These numbers show the excellent employment opportunities for technical college graduates.

Figure 1. 2014 Graduate Outcome report for the Agribusiness Division, WI Technical College System

### *Agribusiness Division – All*

Program Name	No. of Grads	Responses	In Labor Force	Employed	Employed Related	Seeking Employ- ment	Median Salary Hourly	Median Salary Annually	Ave. Hours / Week
<i>Associate Degree Totals</i>	228	166	136	128 (94%)	108 (84%)	8	\$14.46	\$32,210	45
<i>Short-Term Technical Diploma Totals</i>	49	34	30	30 (100%)	28 (93%)	0	\$12.82	\$36,700	63
<i>One-Year Technical Diploma Totals</i>	96	80	68	68 (100%)	59 (87%)	0	\$11.50	\$31,601	53
<i>Two-Year Technical Diploma Totals</i>	28	27	23	23 (100%)	22 (96%)	0	\$12.00	\$28,598	51
<b><i>Agribusiness Division Totals</i></b>	<b>401</b>	<b>307</b>	<b>257</b>	<b>249 (97%)</b>	<b>217 (87%)</b>	<b>8</b>	<b>\$13.00</b>	<b>\$31,659</b>	<b>51</b>

## University of Wisconsin-Extension Cooperative Extension

Wisconsin agriculture is an \$88.3 billion industry and provides 413,500 jobs. Despite combined effects of the drought of 2012 and lingering effects of the recent recession, agriculture and horticulture have risen in importance for the Wisconsin economy — accounting for 11.9% of employment, 10.9% of labor income, 10.9% of total income, and 16.1% of industrial sales (<http://wp.aae.wisc.edu/wfp/contribution-of-agriculture-to-the-wisconsin-economy>). Also playing a major role in state and local economies, the \$22.9 billion forest products industry provides another 59,500 jobs.

University of Wisconsin-Extension Cooperative Extension provides trusted research-based education and assistance transforming lives, organizations and communities through four program areas — Agriculture and Natural Resources Extension (ANRE); Community, Natural Resource and Economic Development (CNRED); Family Living; and 4-H Youth Development. In 2011, extension leadership sought statewide input on critical and emerging issues requiring interdisciplinary response. This led to 2012 development of two new working groups supporting all program areas — the Community Food Systems Community of Practice who awarded 5 community engagement mini-grants in 2014 and are accepting applications for 2015; and Engaging Young People to Sustain Communities, Families and Farms. The extension network — state specialists on 5 University of Wisconsin campuses, at 11 agricultural research stations and centers supporting county educators in all 72 counties working with 3 tribal nations, public and private educational partners, farm and woodland owners, families and others — fosters collaboration, innovation, economic and workforce development, improving management practices as well as scientific understanding of agriculture, horticulture, food safety and forestry.

ANRE county educators and state specialists are strengthening the vibrant and robust agricultural economy, healthy and safe food systems and valued natural resources while supporting colleagues and partners providing education and assistance. ANRE faculty and staff also teach through University of Wisconsin departments, Farm and Industry Short Course, 4-H Youth Development agricultural programs, statewide, nationwide and worldwide. ANRE statewide teams include dairy; farm and risk management; livestock; nutrient management; grains; forages; fresh market and commercial vegetable crops; fruit crops; horticulture; small farms; and bioenergy.

CNRED state specialists target workforce development in the forest products industry to improve mill efficiency and raw material recovery, essential elements for remaining competitive in forest products manufacturing. They are investigating having these courses qualify for the Sustainable Forestry Initiative certification system:

- Hardwood Lumber Grading Short Course sponsored by UW-Extension and Lake State Lumber Association Education, Inc. — This is a short version of the 12-week course run

by the National Hardwood Lumber Association, the certifying body for American hardwood lumber grades.

- Hardwood Sawing, Edging, and Trimming Short Course also sponsored by UW-Extension and Lake State Lumber Association Education, Inc.
- Dry Kiln Operators Course sponsored by UW-Extension, Great Lakes Kiln Drying Association, and Northcentral Technical College.

Public and private service providers such as crop and forestry consultants, cooperative or private business sales staff, veterinarians, dairy nutritionists, lenders and other advisors increasingly turn to extension for professional development training and support, and validation of best management advice they share with farm and forest owners, families, agencies and communities. A comprehensive 2012 evaluation study report documents how partnerships with trained agricultural service providers help extension state specialists and county educators bolster Wisconsin's economy and support jobs.

UW-Extension's work to support Wisconsin's agriculture, horticulture, safe food handling and processing and natural resources is too extensive to cover fully in this report. Here are some current examples of significant extension contributions to agriculture education and workforce development priorities:

**Dairy Modernization — Local extension keeps small business viable and growing:** As dairy farm numbers drop, a shortage of milk for cheese requires importing milk from other states. While University of Wisconsin-Extension dairy modernization focuses on all farms, the 7,500 still milking fewer than 100 cows in old-fashioned barns may need to modernize to stay competitive. Extension campus specialists and 42 county dairy and livestock educators personally helped meet 738 such producers' unique needs in 56 counties since 2011. With extension assistance, farmers made investments in milking, housing, feeding, and manure handling and storage systems design and management, and engaged in farmstead planning for the next generation. They adopted practical solutions that improved worker safety, cow comfort and health, production and profitability, and reduced labor. All of these factors helped bolster the state's \$43.4 billion dairy industry. Leading state cheese production, Green County farmers who recently modernized reported expanding their herds by an average 63 cows with nearly 10% increase in milk per cow. Each cow adds another \$30,000 that circulates through local communities. This expansion of both cow numbers and increased production per cow resulted in 55,292,337 more pounds of milk, keeping 18 processing plants and 12 cheese plants operating at capacity. Green County plants provide over 3,000 jobs to process over 60 specialty cheeses, resulting in \$1.29 billion in dairy product sales.

**Teaming with agricultural professionals to improve dairy reproduction efficiency:** As dairy herds produced more milk per cow over the past 50 years, fertility waned. Because reproduction includes aspects of physiology, genetics, management, health and nutrition, optimizing reproductive performance requires an integrated approach sharing information and expertise among all farm personnel and their advisors. University of Wisconsin-Extension built on previous herd management

teams that improved milk quality, developing the farmer-directed Repro Money Program. Supported by extension resources, on-farm teams of county extension team leaders (100% involvement), farm owners (100%), veterinarians (100%), nutritionists (90%), herd managers (62%), artificial insemination consultants and technicians (60%), and others identified areas for improvement, set goals, developed action plans, assigned tasks and reviewed results. Of the 40 farmers completing the program, 77.5% achieved all their goals, improving their herd 21-day pregnancy rate by an average 2%, valued \$31 per cow per year totaling \$516,520 for all 40 farms (2010 to 2014, average herd size 414 cows and milk price \$18.80 per hundred pounds).

Farmers, extension educators and agricultural professionals are building trust and relationships for continued problem-solving among the dairy business community. Most farmers chose to continue their Repro Money Teams (80%), further enhancing reproductive and economic improvements. National eXtension Repro Money webinars highlighting best practices and outcomes in partnership with University of Kentucky DAIReXNET leadership are available at:

<http://www.extension.org/pages/15830/archived-dairy-cattle-webinars>

**Improving risk management:** The 2014 Farm Bill ushered sweeping dairy policy changes — farmers must sign up to be protected, and costs of insurance vary depending on the amount of milk and the margin each farm wants to protect. Decisions made during late 2014 would affect program payments for the next year, creating an urgent need for education. University of Wisconsin received funding to develop decision tools and provide education on 2014 Farm Bill Title 1 programs including the Margin Protection Program for Dairy (MPP-Dairy). Collaborating with 6 other Land Grant institutions, this became the national Program on Dairy Markets and Policy (DMaP). Extension campus specialists and more than 30 county extension educators directly trained more than 6,210 farmers and their advisors through 33 meetings and 5 webinars co-hosted by Farm Service Agency (FSA) statewide. FSA enrollment statistics show that of 10,860 dairy farms licensed in 2013, 54% enrolled in MPP-Dairy (5,864), and 55% of those (3,225) elected buy-up coverage (Novakovic et al, DMaP BP 15-01: [dairymarkets.org](http://dairymarkets.org)). Signing up for MPP-Dairy allows producers to protect (insure) the margin they need to cover expenses. On moderate-sized operations, returns could top \$100,000 in an adverse price and margin year.

**Expanding access:** Building relationships with the state Farm Service Agency (FSA) and local FSA offices fostered the ground work for future collaborative trainings. Local agriculture insurance and agriculture lending partners further allow extension to become a more integral part of the team approach to agriculture production and risk management found throughout successful farming operations. Partnerships with insurance and financial industries also lead to sponsorship of educational events and help offset costs. Personal contact encouraged participation of Latinos who lacked previous experience with risk management programs. As a large, progressive operator, a trained Hispanic dairy farm owner helped demonstrate locally this new Farm Bill Margin Protection Program for Dairy is available to all dairy farms. Many farms do not yet have access to education through technology. For those without

direct access to the Internet or even a computer, Wisconsin extension specialists also developed an offline tool and decision tree publications. The Program on Dairy Markets and Policy web site houses UW-Extension software and resources used by FSA in support of the MPP nationwide, receiving around 1,000 unique visits per day from September to December 2014 at: <http://dairymarkets.org/mpp>

**Building regional capacity among agricultural professionals and service providers:** Simply counting educational contacts does not capture the extent of a program's reach. For example, the 1,650 agricultural professionals who attended the 2014 Wisconsin Crop Management Conference from Wisconsin, Minnesota, Iowa, Illinois, Indiana and Michigan produce a large multiplier effect as Wisconsin extension research-based recommendations and new Farm Bill Agriculture Risk Coverage and Price Loss Coverage (ARC/PLC) education and resources ultimately reach an increasing portion of the Great Lakes Region crop production sector including farmers.

Extension integrated pest management (IPM) and other specialists reinforce this work through regional professional development trainings including formal classroom instruction and field days developed and delivered by county extension educators for Wisconsin's 656 Certified Crop Advisors who earn 40 hours of continuing education units every 2 years to remain certified. The IPM group also developed a YouTube training library in collaboration with extension campus staff — 50 videos offering 18 hours of educational training to more than 100 people seeking certification each year. Evaluation conducted after the 2015 summer exam shows that 100% of respondents said the videos better prepared them for the exam. After viewing 16 pest management videos, 90% reported increased pest identification skills, 85% increased their knowledge of pest life cycles, and 80% increased their knowledge of preventing pest resistance.

**Creating and retaining jobs:** In 2014, extension Pesticide Applicator Training supported 1,823 private and 4,807 commercial applicators, enabling farmers and employees of agronomic, horticulture and green industries to safely apply pesticides — protecting themselves, the public and the environment. Farmers must be certified to purchase pesticides classified as restricted use, frequently used in pest management programs on their farms. If these farmers were not certified as private applicators, they would have to hire commercial applicators to make these pesticide applications, which would increase their operating costs. Wisconsin further requires that any person applying any pesticide on a contractual basis also be trained.

Commercial applicators trained by extension must pass an exam to become certified. With this certification and licensing, they can be employed (i.e. jobs created). Certified applicators must complete continuing education units to maintain their certification (i.e. jobs retained). Wisconsin has 17 commercial categories to address specific needs of these types of pest control: Turf and Landscape; Field and Vegetable; Antifouling Paints; Aquatic and Mosquito; Companion Animals; Forestry; Fruit Crops;

Greenhouse and Nursery; Livestock and Poultry; Right-of-Way and Natural Areas; Seed Treatment; Sewer Line Root Control; Space and Commodity Fumigation; Structural Pest Control; Termite Control and Wood Preservation. There are also categories addressing needs of General Farm; Greenhouse and Nursery, and Fruit Crops for Private Applicators (those producing an agricultural commodity on their own or employers' property) as well as three subcategories: Aerial Application; Chemigation; and Soil Fumigation.

**Strengthening forestry workforce development:** Active forest management is necessary to maintain healthy forests, which generate a sustainable stream of wood products. Therefore, forest health and the vitality of Wisconsin's rural economies depend on a strong forest products industry to provide markets for forest raw materials and jobs for residents. Ensuring an adequate and trained workforce is a priority for the Wisconsin Council on Forestry that emerged from the 2013 Wisconsin Forestry Economic Summit. As described above, UW-Extension offers several courses targeted at workforce development to improve mill efficiency and raw material recovery. UW-Extension continues to work with the Wisconsin Council on Forestry to address workforce development needs in the logging sector. Logging professionals are critical to the wood supply chain and essential to sustainable forest management and Wisconsin's value-added forest products industry. Extension state specialists are also developing a forest economic training series for Department of Natural Resources (DNR) foresters. The first series starts in September 2015 with plans to open this series to consultant foresters after the first wave of DNR foresters is through the program.

**Assuring safe low-acid canned foods:** As a group, canned foods such as pickles, salsas and tomato-based products are referred to as acidified foods. Processed incorrectly, such foods are potentially hazardous. As a result, the Food and Drug Administration requires training for all individuals involved in low-acid canning industry critical operations. In 2014, University of Wisconsin-Extension provided critical training for 92 such individuals from Illinois, Minnesota and Wisconsin through the Better Process Control School. To provide proper training meeting processors' business needs while complying with regulations, research was needed to fill knowledge gaps in the safety and regulatory framework for acidified foods. Collaborating with North Carolina State University, integrated research and extension education "bridged the gap" by providing validated thermal processing critical limits for acidified canned foods pH 4.1 to 4.6. A training manual for the industry was developed, a Community of Practice formed and met at the 2014 International Association for Food Protection meeting, sharing best practices among more than 2,800 professionals, processors and regulators from 51 states and six Canadian provinces. Training and supporting this industry assures food safety while protecting public health.

**Preparing youth for careers in agriculture:** The 4-H Youth Development program connects directly with young people ages 5 to 19 across the state of Wisconsin. Through 4-H, young people engage in their communities and develop skills to navigate the challenges of a complex world. More than 360,000 youth participate in Wisconsin 4-H programs including clubs, educational opportunities at school, after-school programs, and neighborhood youth centers. In 2014, 2,073 extension-trained volunteer adults advised

the 18,059 youth who enrolled in 4-H beef, swine, sheep, meat goat, poultry and rabbit projects, many with the goal of producing a quality meat animal for consumers.

The Wisconsin 4-H Meat Animal Quality Assurance (MAQA) program is an extension of beef and pork industry programs for adults to ensure a safe and wholesome food product. The MAQA program has been conducted since 2003 with youth in beef, sheep and swine projects. It focuses on animal management and production practices in three areas: Care and Management, Animal Health Products, and Animal Handling. More than 2,000 youth in 6th grade and above from 58 counties participated in a retrospective evaluation questionnaire. Evaluation data analysis by the UW-River Falls Survey Research Center shows increases in knowledge and skills in all three focus areas.

Respondents reported the greatest increases in identifying meat quality problems, reading feed and antibiotic labels, giving injections correctly, keeping accurate records, identifying current agriculture issues, and communicating production agriculture practices to non-agriculture audiences. MAQA-trained youth develop and practice positive animal agriculture behaviors, skills and abilities that improve animal projects and prepare them for careers in agriculture. This evaluation supports earlier evaluations, that quality assurance training increases knowledge and, more importantly, their practice in quality assurance. These youth are better prepared to raise public awareness about the importance of proper animal handling, care and welfare.

## **Current and future opportunities, issues and concerns**

### **Opportunities include:**

1. Wisconsin's agriculture is diverse and dynamic and UW-Extension continues to strive to address the emerging opportunities, needs and issues – with applied research, relevant educational programs and new partnerships.
2. In many cases, new technologies are making it easier to provide educational resources.
3. UW-Extension strives to work with new partners to address the needs of current and new audiences/clientele groups – organic production, Latino dairy workers, women in agriculture, Amish, small farms, urban agriculture, etc.

### **Issues and Concerns include:**

1. Budget cuts have consequences. The 2015-17 Wisconsin biennial budget reduced the State of Wisconsin's annual support for Cooperative Extension by approximately \$2.7 million. When combined with the base cut from the previous biennium, Cooperative Extension has a structural deficit of approximately \$4 million. This translates to as many as 80 county-based or 50 campus-based state specialist positions on (Cooperative Extension faculty and/or staff). Cooperative Extension is working to figure out how best



to transition to a smaller organization with fewer county and campus based faculty and academic staff. This will impact UW-Extension's applied research, educational programs and support for Wisconsin's diverse agriculture, horticulture and natural resources.

2. Recruiting, hiring and retaining high quality county-based agriculture and horticulture educators. There continues to be a general lack of persons with graduate degrees in agriculture and horticulture to fill UW-Extension positions. The "pipeline" of qualified applicants for positions is less than needed.
  - Several educators have left Extension to accept positions in the private sector or with the Wisconsin Technical College System – often citing compensation, work/life balance and/or the opportunity to pursue more specialization in their careers
  - Candidate pools for most positions are weak
  - Fewer candidates with direct experience in production agriculture/horticulture
  - More time and additional costs to train less qualified candidates (and fewer resources to provide this training)
3. Recruiting, hiring and retaining high quality campus-based state specialists (UW-System faculty and academic staff with UW-Extension appointments)
  - Several Extension state specialists have left the UW-System for positions at other universities or industry.
  - With the budget cuts described (#1 above) some areas of content will be lacking state specialist support (reducing applied research and extension programming support in area of content). Four notable areas with no or little state specialist support include: row crop weeds, row crop entomology, vegetable crop production and animal health (beef, sheep, swine, small ruminants)
4. Professional development – keeping faculty and staff current in an environment that demands expertise and specialization. Costs for professional development continue to rise (travel, lodging, registration fees, etc.)
5. Ever faster pace of changes in technology and expectations of younger faculty and staff for support in the availability of and training for the use of technologies
6. From a 4H & Youth Development perspective, potential students have perceptions about careers in agriculture being about just production. Students don't realize that there are so many careers related to agriculture i.e. marketing, communications, education, sales, product development, food science, inspection, engineering, etc.

### **How is UW-Extension addressing opportunities, issues and concerns?**

1. UW-Extension is always looking at ways to use new technologies to coordinate and deliver educational programs to support Wisconsin agriculture, horticulture and natural resources
2. In 2014, Agriculture and Natural Resources Extension initiated an internship program (on small scale) to increase the pool of candidates who might consider extension as a career. Six young professionals have now participated in this internship.

3. UW-Extension strives to develop new partnerships to address common goals. Two current 4H and Youth Development initiatives include:
  - A program partially supported by Monsanto called “Challenging Youth to be the Solution” engages youth leaders in learning about the global food production challenge and some of the future careers paths that will be part of the solution.
  - The Chicago Mercantile Exchange (CME) provides support for the 4-H Agricultural Science “Commodity Carnival” Learning Experience. Through the Commodity Carnival youth from of all ages and backgrounds learn about the role of agricultural commodities in daily life. In Wisconsin 4H and Youth Development Educators used the Commodity Carnival teaching approach during the Wisconsin State Fair, Wisconsin Farm Technology Days and 5 county fairs. For 2015 the goal is to engage 8,000 youth (and their parents) in this Commodity Challenge learning experience.

### **What are the priorities for the near future?**

The top near term priority is to find appropriate ways to get smaller while maintaining as much as possible the capacity to provide unbiased, research-based educational programs and resources to the residents of Wisconsin.

Contact: David Williams, ANRE Associate Program Director, 608-262-9309,  
david.williams@ces.uwex.edu

2015 Wisconsin Agriculture Education and Workforce Development Council Annual Report, University of Wisconsin-Extension Cooperative Extension, September 11, 2015

# Wisconsin Agricultural Education & Workforce Development Council

## 2015 Annual Report

### The University of Wisconsin System

The industries associated with agriculture, food and natural resources (forestry and forest products) annually employ over 413,500 Wisconsinites and generate over \$88.3 billion in economic activity. Career Pathways associated with these economic engines include Agribusiness, Animal Systems, Environmental Services, Food Products and Processing, Natural Resources, Plant Systems, and Power, Structural and Technical Systems. Recruiting and educating students for these professions is vital to growth of the Wisconsin economy. Baccalaureate programs that prepare students for professional careers in agriculture and natural resources are offered by UW-Madison College of Agricultural and Life Sciences (CALS); UW-Platteville School of Agriculture (SOA); UW-River Falls College of Agriculture, Food and Environmental Sciences (CAFES); and UW-Stevens Point College of Natural Resources (CNR).

The career outlook remains strong for new college graduates possessing baccalaureate and graduate degrees in agriculture. According to the United States Department of Agriculture National Institute of Food and Agriculture, nearly 58,000 job openings in agriculture and its allied fields (food, renewable resources, and environmental science disciplines) are expected annually in the United States through 2020 (<http://nifa.usda.gov/press-release/one-best-fields-new-college-graduates-agriculture>). Unfortunately, it is expected that there will only be about 35,000 highly-skilled graduates annually with degrees in these fields ready for employment during this time. With career opportunities far exceeding the number graduates it is expected that universities will need to increase their capacity to produce more highly-skilled professionals with agriculture backgrounds. This is a significant challenge in an era when funding to public universities is continually on the decline.

Undergraduate programs in UW-System colleges and schools of agriculture and natural resources enrolled just over 8200 students in their baccalaureate programs during 2014-15. This represents a 3.3 percent increase over the previous year, and is 58 percent more than 2005. About 62 percent (5136) of students enrolled during 2014-15 were pursuing a degree in agriculture, food and natural resource career pathways. Among these career pathways, significant enrollment increases were observed in programs representing agribusiness systems (8.2 percent greater than 2013-14) and plant systems (4.7 percent greater than the previous year). Within the plant systems career path, the number of students pursuing degrees in

agronomy and soil science, areas currently in high demand by industry, was up 10.2 percent. Modest enrollment increases were observed in power, structures and technical systems (up 1.8 percent), animal systems (up 1.7 percent) and natural resource systems (up 0.6 percent) career paths. Significant enrollment decreases were observed for agricultural education (down 10.7 percent), environmental service systems (down 1.0 percent) and food, products, and processing (down 0.6 percent).

Increased enrollments have resulted in more baccalaureate degree recipients. Over 1828 undergraduates completed baccalaureate degrees during 2014-15 from programs in CALS (UW-Madison), CNR (UW-Stevens Point) and SOA (UW-Platteville), which was roughly 3.5 percent more than the previous year, and over 6 percent more than 2011-12. (*Note: graduation numbers were not available from UW-River Falls at the time of printing*). Among the 877 degrees awarded in the agriculture, food, and natural resources career pathways, significant increases in the number of degrees awarded were observed in programs offered in food products and processing (up 52 percent); power, structures and technical systems (up 40 percent); agribusiness systems (up 31 percent); plant systems (12.5 percent) and environmental service systems (up 9 percent) career pathways. Modest decreases in the number of graduates were observed among programs offered within the animal systems (down 17.3 percent) and natural resources systems (down 11.5 percent) career pathways.

Enrollment in the School of Veterinary Medicine increased slightly in 2014-15 when compared to the previous year. These increases occurred primarily in the Doctorate of Veterinary Medicine (DVM) and Master of Science (MS) programs. Enrollment in the PhD program was unchanged. The number of graduates completing the DVM and MS programs were significantly lower in 2014-15 but are expected to increase again next year.

### ***University of Wisconsin-Madison School of Veterinary Medicine***

#### ***Enrollment and Graduation Statistics***

<b><i>Academic Program</i></b>	<b><i>Enrollment (2014-15)</i></b>	<b><i>Change from 2013-14 (%)</i></b>	<b><i>Graduates (2014-15)</i></b>	<b><i>Change from 2013-14 (%)</i></b>
<i>Doctorate of Veterinary Medicine</i>	330	2.8	79	-2.5
<i>Master of Science</i>	11	22.2	3	-57.1
<i>Doctorate of Philosophy (PhD)</i>	46	0.0	6	100
<b><i>TOTAL ENROLLMENT</i></b>	<b>387</b>	<b>2.9</b>	<b>88</b>	<b>-3.3</b>

While enrollments and the number of baccalaureate degrees awarded continue to increase at UW-System colleges and schools of agriculture and natural resources, the number of graduates seeking careers in these areas is unlikely to meet the demand for new professionals during the rest of this decade.

## **Current and Future Opportunities**

Growth of the agriculture economy over the past five years has created an enormous demand and increased wages for highly-skilled professionals with baccalaureate degrees in agriculture, food, and natural resources. Just last year The USA Today published an article listing agriculture and natural resources as the fifth highest paying degree with a 2015 projected starting salary of \$51,220 (<http://www.usatoday.com/story/money/personalfinance/2015/01/31/cheat-sheet-highest-paying-degrees/22478439/>).

Continued growth in well-paying positions should help us recruit students into agriculture, food and natural resources career pathways. Unfortunately we still have a culture in which high school graduates and college students select careers based on personal interest instead of career availability, which does not always correlate with the availability of career positions. To change this culture we must increase our efforts to promote agriculture careers and publicize the need for agriculture professionals. We must also recruit beyond our state borders and better publicize the affordability and high quality of education that UW-System Institutions offer as the number of high school graduates in Wisconsin is expected to decline for the foreseeable future.

## **Challenges**

Funding for higher education challenges our efforts to increase capacity and develop a highly-skilled workforce that meets the needs of our industry. Despite significant budget cuts and freezes to tuition increases during the last two biennium budget cycles, we have increased undergraduate enrollments and the number of graduates with baccalaureate degrees steadily for the last decade. However, these increases in enrollment and number of graduates will not keep pace with the anticipated demand for agricultural professionals through the remainder of this decade. To compensate for reduced state funding we have become more entrepreneurial and philanthropic to support our undergraduate and graduate programs and increase enrollments. However, the most recent cut of \$250 M to the UW-System will likely result in significant reductions in staffing for agriculture, food and natural resources programs at some of our campuses.

Reduced funding for education has also compromised our ability to recruit and retain quality faculty and staff. Starting salaries are currently as much as 40% lower than peer institutions. In addition, most faculty and staff have not received satisfactory raises in the last 15 years. If we are serious about increasing our capacity to educate a highly-skilled workforce we must (1) provide competitive salaries, (2) provide adequate resources for students and faculty to engage in high impact practices such as service learning and research, and (3) create an environment of trust and collaboration between Higher Education and State Government (political polarization is unattractive to those from other states looking at career positions in Wisconsin).

## **Priorities for the future**

With the expected demand for agriculture products and shortage of highly-skilled professionals for the next decade, we must find ways to prepare more people to enter the workforce. To accomplish this objective the following priorities must be addressed.

- Increase our capacity to recruit, retain and graduate more professionals in agriculture, food and natural resource career pathways with baccalaureate and advance degrees. Career pathways with the highest industry needs include plant systems; power, structures and technical systems; food products and processing; and agribusiness systems.
- Improve our ability to recruit and retain quality faculty and staff. To accomplish this goal we must begin by offering more competitive salaries for new and existing employees. Focus should be placed on areas of industry need.
- Continue to support educational programs, research and outreach efforts that emphasize improvements in production and management efficiency. This focus will be required as the need for agriculture products increases and the skilled workforce decreases.

To accomplish these priorities it will be necessary to increase funding for agriculture, food and natural resource programming aligned with the greatest industry need. In addition, the burden to pay for these initiatives cannot be placed on those that can afford it least, our students. Therefore, priority for raising funds must be accomplished by the following means:

- Becoming more nimble through routine evaluation and reallocation of funding to align with industry needs,
- Increasing entrepreneurship through grants and gifts,
- Increased investment by industry through the developing partnerships, and
- Investment by state government to support educational programming aligned with industry needs.

Please visit the links below to learn more about UW-System institutions that offer baccalaureate and graduate programming in agriculture, food and natural resources.

College of Agriculture and Life Sciences at UW-Madison (UW-Madison Home: <http://www.wisc.edu/>; College: <http://www.cals.wisc.edu/>; Career Services: <http://www.cals.wisc.edu/students/careerServices/>; Farm and Industry Short Course: <http://fisc.cals.wisc.edu/>).

School of Agriculture at UW-Platteville. UW-Platteville (Home: <http://www.uwplatt.edu/>; School website: <http://www.uwplatt.edu/agriculture>; Majors and minors: <http://www.uwplatt.edu/agriculture/academic-programs>; Faculty and Staff: <http://www.uwplatt.edu/agriculture/school-agriculture-faculty-and-staff>; Pioneer Farm: <http://www.uwplatt.edu/pioneer-farm>).

College of Agriculture, Food and Environmental Sciences at UW-River Falls. (Home: <http://www.uwrf.edu/>; College website. <http://www2.uwrf.edu/college-of-agriculture/>; Program: <http://www2.uwrf.edu/college-of-agriculture/majors.htm>; Faculty and Staff: <http://www2.uwrf.edu/college-of-agriculture/people.htm>; Laboratory Farms: <http://www2.uwrf.edu/college-of-agriculture/farms.htm>; Internship Office: <http://www2.uwrf.edu/college-of-agriculture/internship.htm>).

College of Natural Resources at UW-Steven's Point. (College website: <http://www.uwsp.edu/CNR/>; Undergraduate Programs: <http://www.uwsp.edu/cnr/Pages/undergraduate.aspx>; Graduate Programs: <http://www.uwsp.edu/cnr/graduateProgram/Pages/default.aspx>; Faculty and Staff: <http://www.uwsp.edu/cnr/Pages/Faculty.aspx>; Quick Facts: <http://www.uwsp.edu/cnr/Pages/quickFacts.aspx>).

Undergraduate enrollment and graduation statistics for agriculture and natural resources programs offered at UW-Madison, UW-Platteville, UW-River Falls and UW-Stevens Point during 2014-15.

Career Cluster and Academic Program	Campus (College/School)	Undergraduate Enrollment		Graduates	
		2014-15	Change from 2013-14 (%)	2014-15	Change from 2013-14 (%)
Agriculture, Food and Natural Resources					
Agribusiness Systems					
Agribusiness Management	UW-Madison (CALS)	103	28.8	47	213.3
Agribusiness <sup>a</sup>	UW-Platteville (SOA)	301	4.5	71	-1.4
Agribusiness	UW-River Falls (CAFES)	180	6.5	NA <sup>b</sup>	NA <sup>b</sup>
Agriculture & Applied Economics	UW-Madison (CALS)	48	2.1	18	5.9
Agribusiness Systems Totals		632	8.2	136 <sup>c</sup>	30.7 <sup>c</sup>
Agricultural Education & Agricultural Studies					
Agriculture Education	UW-Platteville (SOA)	59	18.0	13	8.3
Agriculture Education	UW-River Falls (CAFES)	74	-8.6	NA <sup>b</sup>	NA <sup>b</sup>
Agricultural Studies	UW-River Falls (CAFES)	42	-35.4	NA <sup>b</sup>	NA <sup>b</sup>
Agricultural Education & Agricultural Studies Totals		175	-10.7	13 <sup>c</sup>	8.3 <sup>c</sup>
Animal Systems					
Animal Science	UW-Madison (CALS)	187	-2.6	33	32.0
Animal Science	UW-Platteville (SOA)	308	-5.8	53	-37.6
Animal Science	UW-River Falls (CAFES)	455	2.7	NA <sup>b</sup>	NA <sup>b</sup>
Dairy Science	UW-Madison (CALS)	79	17.9	17	6.3
Dairy Science	UW-River Falls (CAFES)	141	19.5	NA <sup>b</sup>	NA <sup>b</sup>
Poultry Science	UW-Madison (CALS)	3	-40.0	2	100.0
Animal Systems Totals		1172		105 <sup>c</sup>	<sup>c</sup>
Environmental Service					



<u><b>Systems</b></u>					
Community & Environmental Sociology	UW-Madison (CALS)	68	-4.2	35	40.0
Conservation/Land Use Planning	UW-River Falls (CAFES)	94	0.0	NA <sup>b</sup>	NA <sup>b</sup>
Environmental Science	UW-Madison (CALS)	92	21.1	25	177.8
Environmental Science	UW-River Falls (CAFES)	39	-4.9	NA <sup>b</sup>	NA <sup>b</sup>
Geology	UW-River Falls (CAFES)	37	-7.5	NA <sup>b</sup>	NA <sup>b</sup>
Reclamation, Environment & Conservation	UW-Platteville (SOA)	32	-22.0	5	-61.5
Resource Management	UW-Stevens Point (CNR)	449	-2.2	69	-9.2
Sustainable Management	UW-River Falls (CAFES)	18	20.0	NA <sup>b</sup>	NA <sup>b</sup>
<b>Environmental Service Systems Totals</b>		<b>829</b>		<b>134<sup>c</sup></b>	
<u><b>Food Products &amp; Processing Systems</b></u>					
Food Science	UW-Madison (CALS)	150	2.0	41	51.9
Food Science & Technology (Suspended)	UW-River Falls (CAFES)	3	-57.1	NA <sup>b</sup>	NA <sup>b</sup>
<b>Food Products &amp; Processing Systems Totals</b>		<b>153</b>		<b>41<sup>c</sup></b>	<b>51.9<sup>c</sup></b>
<u><b>Natural Resource Systems</b></u>					
Fisheries & Water Resources	UW-Stevens Point (CNR)	325	-0.6	66	29.4
Forestry	UW-Stevens Point (CNR)	433	7.2	72	-23.4
Forest Science	UW-Madison (CALS)	36	-7.7	8	-27.3
Paper Science	UW-Stevens Point (CNR)	68	-1.4	9	12.5
Wildlife	UW-Stevens Point (CNR)	422	-3.0	84	-22.9
Wildlife Ecology	UW-Madison (CALS)	103	-1.9	30	-3.2
<b>Natural Resource Systems Totals</b>		<b>1387</b>		<b>269<sup>c</sup></b>	<sup>c</sup>
<u><b>Plant Systems</b></u>					
Agronomy	UW-Madison (CALS)	43	26.5	16	45.5
Crop & Soil Science	UW-River Falls (CAFES)	67	31.4	NA <sup>b</sup>	NA <sup>b</sup>

Entomology	UW-Madison (CALS)	11	10.0	5	66.7
Environmental Horticulture	UW-Platteville (SOA)	31	10.7	9	12.5
Horticulture	UW-Madison (CALS)	31	-27.9	12	33.3
Horticulture	UW-River Falls (CAFES)	66	4.8	NA <sup>b</sup>	NA <sup>b</sup>
Landscape Architecture	UW-Madison (CALS)	62	-11.4	20	0.0
Plant Pathology	UW-Madison (CALS)	25	38.9	7	133.3
Soils	UW-Madison (CALS)	16	-15.8	5	-50.0
Soil & Crop Science	UW-Platteville (SOA)	94	16.0	22	-4.3
Soil Science	UW-Stevens Point (CNR)	114	-3.4	30	20.0
<b>Plant Systems Totals</b>		<b>560</b>		<b>126<sup>c</sup></b>	
<u><b>Power, Structures &amp; Technical Systems</b></u>					
Agricultural Engineering Technology	UW-River Falls (CAFES)	83	9.2	NA <sup>b</sup>	NA <sup>b</sup>
Biological Systems Engineering	UW-Madison (CALS)	145	-23.0	53	39.5
<b>Power, Structures &amp; Technical Systems Totals</b>		<b>228</b>		<b>53<sup>c</sup></b>	<b>39.5<sup>c</sup></b>
<b>Agriculture, Food and Natural Resources Totals</b>		<b>5136</b>		<b>877<sup>c</sup></b>	
<b>Biology &amp; Life Sciences</b>					
Biochemistry	UW-Madison (CALS)	585	14.3	151	8.6
Biology	UW-Madison (CALS)	1420	5.8	476	-11.9
Genetics	UW-Madison (CALS)	303	-3.5	75	31.6
Life Sciences Communication	UW-Madison (CALS)	189	7.4	87	33.8
Microbiology	UW-Madison (CALS)	226	0.0	70	70.7
Nutritional Sciences	UW-Madison (CALS)	346	9.1	92	39.4
<b>Biology &amp; Life Sciences Totals</b>		<b>3069</b>	<b>6.3</b>	<b>951</b>	<b>2.9</b>
<b>Agriculture, Food and Natural Resources plus Biology &amp; Life Sciences Totals</b>		<b>8205</b>	<b>3.3</b>	<b>1828<sup>c</sup></b>	<b>4.0<sup>c</sup></b>

<sup>a</sup>Includes Agricultural Engineering Technology subprogram.

<sup>b</sup>Graduation statistics were not available from UW-River Falls at the time of printing.

<sup>c</sup>Does not included graduation statistics from UW-River Falls.

## **Council Structure Recommendations**

The activities and results of 2014-15 continue to strengthen the commitment to fulfill the Vision and Mission of the Council. All of the functions as originally identified remain and are still necessary for Wisconsin's Agriculture, Food and Natural Resource Sectors to succeed. On June 22, 2015, the Council voted and approved a motion recommending the Council remain in place to carry out the following functions as defined by the Act:

1. Increase the hiring and retention of well-qualified employees by industries related to agriculture, food and natural resources.
2. Promote the coordination of educational systems to develop, train and retain employees for current and future careers related to agriculture food and natural resources.
3. Develop support for career pathways and employment in fields related to agriculture, food and natural resources.
4. Recommend policies and other changes to improve the efficiency of the development and provision of agricultural education across all educational systems.
5. The Council shall seek to accomplish these purposes by advising state agencies on matters related to integrating agricultural education and workforce development systems.

As required by law, the Council will re-visit this motion in June, 2016.

## **Council Member Approval of Activities and Recommendations**

The Wisconsin Agricultural Education and Workforce Development Council 2014-15 Annual Report was distributed electronically to all Council members. Each Council member was asked to review the Annual Report, provide input and to provide their approval or dissent of the Annual Report. No dissent or minority opinions were received.

### **Wisconsin Agricultural Education and Workforce Development Council Annual Report contacts:**

Paul Dietmann, Council Chair  
Badgerland Financial  
[paul.dietmann@badgerlandfinancial.com](mailto:paul.dietmann@badgerlandfinancial.com)

Al Herrman, Executive Director  
4799 Kiltie Court  
New Franken, WI 54229  
920-866-9992  
[aldh@centurytel.net](mailto:aldh@centurytel.net)